PalArch's Journal of Archaeology of Egypt / Egyptology

DESIGNING A SPORTS AND RECREATION PARK COMPLEX WITH AN APPROACH TO PHYSICAL AND MENTAL HEALTH IN KHORRAMABAD

Zeinab Baharvand[1], Dr. Mohammad Pirmohammadi[2]*
1Master of Architecture, Islamic Azad University, Khorramabad Branch, Khorramabad, Iran

Email: zainab.baharvand@gmail.com

2*PhD in Architecture, Lorestan University, Khorramabad, Iran (correspondent)

Email: arcmpm@yahoo.com

Zeinab Baharvand, Dr. Mohammad Pirmohammadi: DESIGNING A SPORTS AND RECREATION PARK COMPLEX WITH AN APPROACH TO PHYSICAL AND MENTAL HEALTH IN KHORRAMABAD -- Palarch's Journal Of Archaeology Of Egypt/Egyptology 18(7), ISSN 1567-214x

Keywords: relaxation, recreation, sports, park design, mental health

ABSTRACT

The present study aims to design a sports and recreation park complex with an approach to physical and mental health in the city of Khorramabad. The study is applied in terms of purpose and has been performed using the descriptive-analytical survey method. Library and field methods have been used to collect the required data. Also, using the AutoCAD software, the results have been designed in the form of an idea and showed that due to the proposed potentials, Khorramabad can be among the touristic cities of our country such that people can count on it as a long and useful trip. On the other hand, this is strengthened when the city is upgraded, because it currently has many shortages in urban spaces and uses. So, by including a series of recreational and cultural spaces in this complex, in addition to accepting non-residents, the complex will also respond to a part of shortcomings in the region. The combination of the two issues of tourism and hydrotherapy in this region became the most important factor in the formation of this study. On the other hand, creating a suitable accommodation for travelers will meet the needs of the region quantitatively and qualitatively, and by combining it with the hydrotherapy sector, the main potential of the region will be revived, and its true value will be shown by proper use of mineral water springs and performing appropriate scientific-recreational programs, and this touristic pole of the country will have useful and appropriate facilities fitting with the travelers' demands. The proposed complex in the form of hydrotherapy, using the potential of the existing springs, along with creating a sports space and strengthening the tourism potential of the region will provide a controlling and protection of mineral water springs.

INTRODUCTION

Today, the issue of tourism has received attention more than ever before. Tourists and the tourism industry have found a special place to the extent that in most countries they can be a rival of important governmental issues

(Lahijanian and Shie Beigi, 2010). Also, one of the most serious issues that have occupied the human mind for a long time is the extremely confusing and complex issue of the soul and mind. Accordingly, today the main purpose of designing a park is to achieve its social and psychological effects in getting the human and the nature closer to each other as much as possible. In our country, one of the areas that have this potential is the Lorestan province and the city of Khorramabad.

The purpose of designing a space as a park is in fact to create a green space from environmental, leisure, and cultural points of view, as well as a place for peace of mind. On the other hand, designing such a space should be able to achieve valuable patterns that have cultural meanings and concepts resulting from within the society (Masoudi, 2020). From the social environment point of view, what is important in relation to urban green space is the amount of public green space, i.e. the green space in which the movement of the general public is not limited (Shiri and Ahmadi, 2020).

The social functions of urban parks include several things among which the following can be mentioned (Ahmadi and Zendeh Delan, 2020; Davoodi and Rahmani, 2019):

- Creating better social interactions between the citizens in different urban areas
- Creating new work or job fields
- Acquisition and recognition of some social indicators (norms, values, subcultures, etc.), socialization of people and finding new friends, and filling the privacy and loneliness
- Formation of several non-governmental organizations
- Dissemination of ideological ideas and thoughts
- Increasing the sense of kinship or common interests
- Creating a suitable environment for recreation in leisure times.

Having healthy recreation is one of the essential needs of individuals as well as a healthy society; and recreational sports are among the best options for spending leisure time and have many physical, mental, and social benefits for the person. But unfortunately, studies show little attention to this issue. Recent statistics show that 60% of Iranian students have low mobility and 28% of the population is generally inactive (Bagheri and Azemati, 2010).

There have always been many obstacles and problems in the area of public and recreational sports, but the lack of proper promotion and appropriate informing are mentioned as its most important causes. Perhaps there have been many high-quality programs that due to weak promotion and informing have not been able to attract many audiences (Azizi, 2020).

Therefore, it is necessary to make a detailed analysis of the needs of native people in enjoying recreational, educational, and leisure spaces in a suitable environment so that the area of the neighborhood texture which suffers from physical disorders and lack of urban and cultural facilities, etc. can be identified. This study has been developed to find the answer to the question of whether architecture, like other arts, can have a psycho-calming and calming effect on humans' psyche and restore their lost mental balance. So, the main purpose of this study is to analyze the role of architecture and its dimensions and elements in the mental health of citizens.

REVIEW OF LITERATURE

Kaplan (1995) proposed a theory with four special characteristics for urban landscapes, the use of which in planning and design increases the effects of natural landscapes. These characteristics are the ability to move away from everyday environments, the ability to absorb the environment, creating a sense of breadth, compatibility, and adaptation.

Dony (2013) in his study by evaluating the indicators of social health, urban landscape, and sustainable development in cities has examined the role of architecture and urban development on mental health and reducing the stresses of the citizens, caused by living in urban environments. In this regard, Mario (2014) has examined the psychosocial effects of urban parks on improving the quality of citizens' lives through examining the attraction factors of parks in covering the repulsive factors of their place of residence.

Bastani Fard (2006) has examined the role and importance of sports in the individual and social life of humans and has also looked at the relationship between this important issue and the art of architecture; and after explaining the role of sports in the physical and mental health of individuals in the society, has mentioned the art of architecture as a platform for sporting activities and encouraging people in the community to do so.

Maroof and Zarei (2014) have examined the components affecting the health and psychological quality of urban parks. Their results showed that the most important factor that according to experts should be the criterion for designing modern parks in the country is the inner nature of humans and the tendency of every human being toward nature and away from any modernization.

Moslehi and Rafati (2014) have examined the effects of green space on human societies: physical activity, physical and mental health, and reducing accidents. The results showed that green space has direct effects on the health of human societies. On the other hand, Ahmadi and Zendeh Delan (2020) have examined the factors affecting the design of parks. To flourish the creative capabilities of individuals, attention must be paid to creating harmony between their needs and the spaces. Weakness of the physical environment has lasting effects on individuals in societies.

METHOD

The present study is applied in terms of purpose and has been done using the descriptive-analytical survey method. The statistical population of the study is all the individuals present in the public spaces of the city of Khorramabad. Library and field study methods have been used to collect the required data. In the design section, AutoCAD software has been used to implement the idea and the needed factors. Considering the existing potentials in Khorramabad to create the facilities and use potential capacities to attract tourists, this city was selected. After the required studies on the climate, accesses, topography, and design, the desired site for the complex was selected. This site was examined by field and document surveys and through the topographic map. In the last stage, the considered design was proposed for the site.

Climatic characteristics of the study area

Lorestan is a four-season province climatically and it has a diverse climate. This diversity is quite clear from the north to the south and from the east to the west. In the winter, when snow and blizzard are continuing in the north of Lorestan, its southern parts have a pleasant rainy climate. The difference recorded in the cities of the Lorestan province between the absolute maximum and minimum temperatures is more than 80 degrees Celsius. The maximum recorded temperature is 4.47 and the minimum recorded absolute temperature is -36.

The Lorestan province with an average annual rainfall of 550 mm is the third province in terms of rainfall in the country after Gilan and Mazandaran provinces.

In general, three specific climatic regions can be seen in the Lorestan province:

Cold mountainous climate: This region has snowy and very cold winters and mild summers. This region is located in the northern, northwestern, and eastern parts of the Lorestan province. The number of frost days in some parts of this region reaches more than 70 days. In this region, with the first snowfall, a long winter begins, and spring and autumn are short in this region. The cities of Boroujerd, Doroud, Azna, Aligudarz, Noorabad, and Aleshtar, which are more than 1400 meters high, have this climate.

Central temperate climate: This region is the middle level between the northern mountainous area, the northeast, and the southern lowland area of the province. Due to its lower altitude, its winter and spring rainfalls are as rain and frost rarely occur. Spring in this area starts in early March, and in May, due to the increase in heat, summer begins earlier. Khorramabad and its surroundings have this type of climate.

Southern warm climate: This region of the province has the lowest altitude and due to the effect of hot winds of Khuzestan and low latitude and lack of high altitudes has the maximum temperature in summer. The amount of rain in this region is minimal. Poldokhtar and the Papi District have this type of climate, the harvest season of which begins a few months earlier than the other parts of the province.

The geographical location of the province

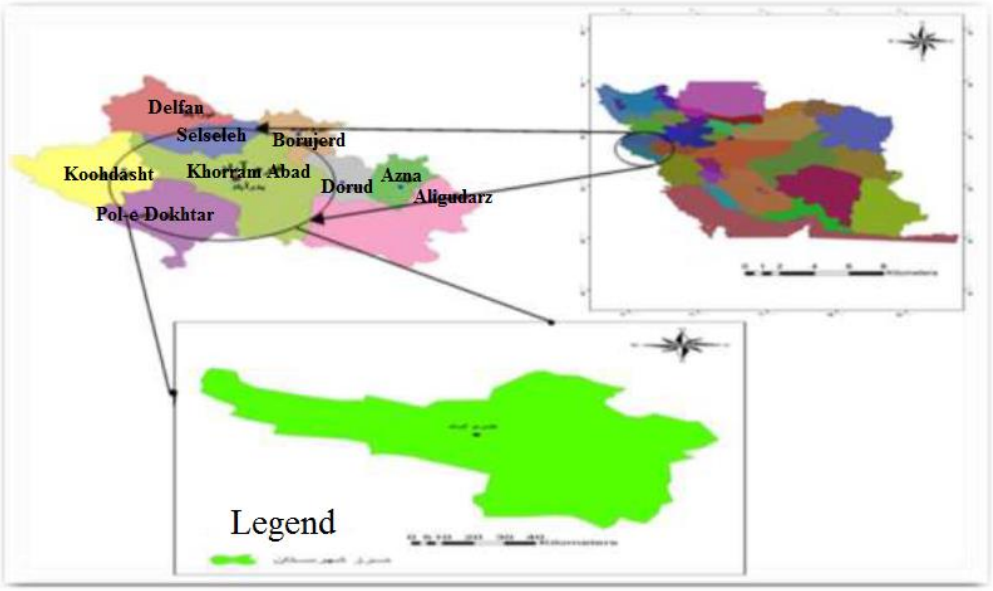

Figure 1: Geographical location of Lorestan (Lashni Zand, 2011)

The average altitude of this city is 1171 meters above sea level. In terms of relative location, Khorramabad is located in the center of the Lorestan province and is limited to the Sefidkooh Mountains in the north.

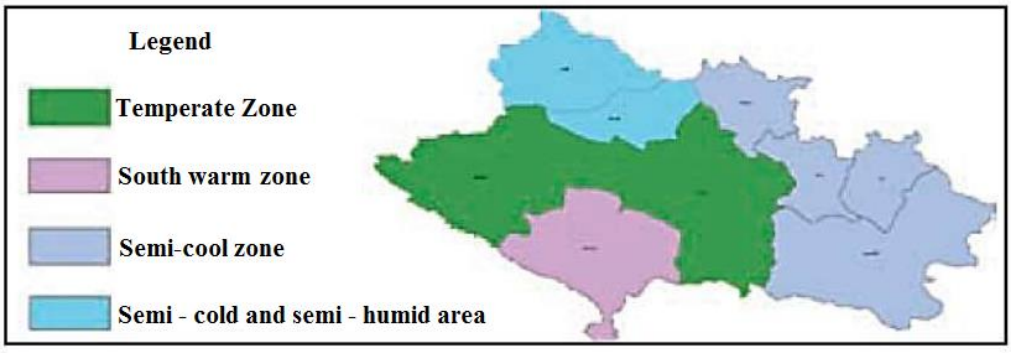

Figure 2: The map of the province's climatic zones (source: Meteorological Organization of the province)

Due to climatic conditions and the status of ruggedness, the Lorestan province is in better condition in terms of water resources compared to many provinces of the country. Lorestan with an average rainfall of 450 mm per year is the third rainy basin in the country after the Caspian Sea and the Lake Urmia basins. The annual runoff production of the province is about 8 billion cubic meters that considering the 4.5 billion rainfall accounts for about 11.8 percent of the country's surface waters. Also, about 5 billion cubic meters of groundwater are stored in hard formations and alluvial aquifers of the province.

Site specifications and establishment of the complex

The considered site is located on land with an area of 188,300 square meters, part of which is selected for the design with an area of approximately 55,625 square meters. The whole land is almost a rectangular shape and the designed part is also the same and its dimensions are suitable for designing such a complex.

Accesses: The designed land reaches from the west side to the main street which is one of the first-class main roads to Boroujerd.

Noise pollution: The most important noise pollution in the complex is located in the southern and western parts of the site.

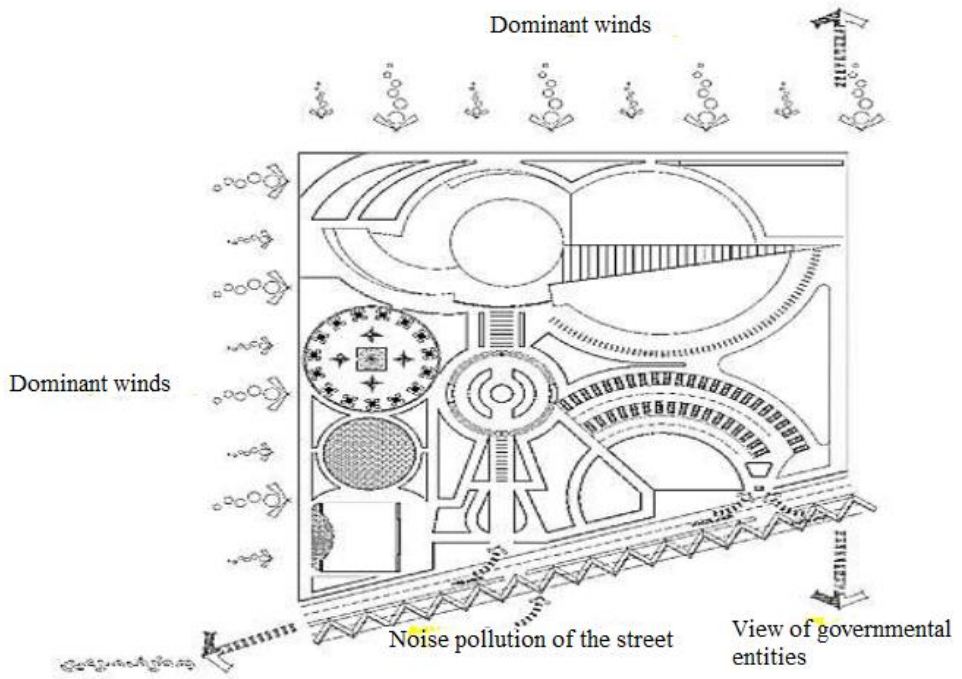

Figure 3: The site and its analysis (source: author)

RESULTS

By examining the collected documents, the main indicators of the park design were identified as follows:

Table 1: Dimensions and elements of biophilic design

Environmental characteristics	Color: This element has always been effective in human evolution and survival. Water: Water has always improved the quality of space and has ever been present in any beautiful space imagined by man. Air: Natural ventilation is always preferred to airs under non-natural processes or stagnant air. The presence of air in the design can have desirable and important conditions such as quality, movement, flow, stimulation of other senses such as smelling, as well as the visual attraction in contrast to the invisible atmosphere. Sunlight: The architect can simply by using natural light instead of artificial light greatly enhance the biophilic quality of his/her design. Plants: Plants have always provided the basic things in human life such as food sources and animal fodder and fiber. Animals: The presence of animals has always been of fundamental importance during human existence. Providing food resources, using them for protection, companionship, and friendship, and sometimes even to reduce dangers are some

		of the useful cases of the presence of animals in the human living environment. Natural materials: Humans always prefer natural materials, even when artificial materials with natural designs are available to them. Views and landscapes: Humans always consider the outside view as an important and desirable thing for inside spaces, especially when landscapes contain natural elements and greenery. Greening the facade: Ivy walls and green roofs are examples of green walls that reflect the historical benefits of organic materials, meaning that humans throughout history have always used plants as food sources, shelter from cold and hot weather, and as camouflage against dangers. Geology and landscape: This shows the coordinated relationship between parks and dominant geological features. The best way for nature-friendly design is to coordinate the design with the existing geological features, which is also referred to as the "rooted" or "ground-based" design. Fire: The presence of fire in a built environment is complex and challenging but desirable.

Natural shapes and forms	Plant maps: Association of the plants' pattern form in the built environment is one of the items existing in biophilic design. Animal motifs (vertebrates): Simulation of animals' lives, although less than plants, exists in green spaces. In some cases, it is possible to show a part of their limbs such as the head or the paw instead of simulating the whole body. Oyster and spiral forms: Oyster and spiral forms are generally full of pure and complex proportions and forms of nature that can be well used in designing the form and texture of parks. Eggs, ovals, and tube shapes: Egg or tube shapes can be used in landscaping designs in real or metaphorical forms. Arches and domes: Arch elements are also derived from nature, which are suitable elements for designing both in terms of structure and aesthetics. Forms that resist straight lines and right angles: The lines and forms that are proportional to natural forces are in a kind of dynamic equilibrium with their surroundings and their general shape is often curved and sinusoidal.

	Simulation of natural characteristics: This feature prefers simulation of natural forms over exact copying of nature. Biomorphism: It refers to the resemblance of the design to living forms of nature which are generally the product of unintentional designing. Geomorphology: The design of some parks is in harmony with the geological structure and form of the project site, sometimes even as if it embraces or follows the project site.
Natural patterns and processes	Sensory diversity: Human survival and well-being have always depended upon harmony with the diverse natural environment rich in sensory stimuli. Information richness: Even today, in the information age, the perceptual richness of the natural world provides the most challenging conditions that man has ever encountered for his/her mind. Life, change and the rust of time: One of the basic features of the natural world is the passage of life over time; this feature can be seen in organic forms. Growth and prosperity: Growth and development represent the passage of time, and their presence in built environments makes people happy.

	Focal point: The navigation capability in natural areas is often strengthened by the presence of a perceptible focal point. The pattern function quality: In short, it can be said that such a quality can increase the understanding of the environment and the feeling of control and domination over the environment. Enclosed spaces: Human has a strong desire for enclosed spaces which is related to the sense of territory and has probably been created during the evolution dilemma to create security and exploit the resources. Transition space: The transition space between the built and the natural environment by providing access from one space to another creates comfort. Integration of components with the whole: This quality is very necessary to reduce chaos and disorder in a complex with various textures and details. Complementary contradictions: There are always contradictory but complementary elements in nature that only by using them together and complementarily, the desired design can be achieved.

	Dynamic tension and balance: The existence of a sense of dynamic balance between different and contrasting forms in a design increases the sense of power and permanence. Fractals: No two beings in nature are the same, and this is the result of fractal order or geometry. Proportions ordered based on hierarchies and scales: This contextual compatibility or similarity can make it possible to integrate very complex patterns.
Light and space	Natural light: The therapeutic and healing effects of natural light on human beings have been completely proven by scientific experiments. Diffused and filtered light: The benefits of natural daylight are enhanced by filtering it, especially in cases of intense radiation. Light and shadow (penumbra): This quality increases the ability to detect objects and can help to create a sense of curiosity and mystery in the environment. Reflective light: To create reflective light, reflective surfaces such as ceilings, floors, and walls that contain light colors can be used. Light pools: development of light pools is very desirable in autumn and

		winter. Warm light: This quality is manifested in areas that are lit with balanced light and surrounded by darker spaces. Light as a form: Manipulating the daylight can create a kind of motivation and dynamism in space or play a sculptural role in the space. Sense of spaciousness: Humans have a completely pleasant view of the sense of spaciousness whether in nature or the built environment. Spatial diversity: This feature is more recognizable in a complementary relationship with ordered and unified spaces. Spatial harmony: This pattern seeks to achieve the desired combination of light, mass, and space in a defined context.
	Space-based relationships	Geographical relationship with space: The feelings of safety resulted from a relationship with the geography of space often increases the feeling of intimacy and expectation of the space. Historical relationship with space: A meaningful relationship with space is often associated over time; a factor that strengthens the sense of participation and awareness of common

	culture and memories of space. Ecological relationship with space: Every space has naturally been stabilized in a fixed relationship with the existing ecology. Cultural relationship with space: This is the same combination of the history, geography, and ecology of a space that is transformed into a part of the individual and shared identity. Indigenous materials: The fixed relationship between the building and space is usually strengthened through the use of natural materials. Landscaping orientation: Parks and the landscaping that have relationships with their surrounding environment play an important role in shaping the sense of place. In particular, in these parks, the environmental features, features of the landscape or the project area that define the form of the park: features of the project land can shape the form of the park; especially the major geological features, natural elements, and water in the built environment can be combined with the biophysical context of the project. Integration of culture and ecology: The integration of culture and ecology strengthens long-term

		sustainability. The spirit of the space: The spirit of the space is a degree of the concept of extension of the human soul in the built or natural environment when they become the components of the individual identity or the common identity of humans. Avoidance of placelessness: placelessness is in contradiction with spatial design; this was added to the elements of biophilic design to avoid it at every possible time.
	Evolved human-nature relationships	Landscape and shelter: A shelter represents a structure or the ability of the natural environment to provide a safe and protected environment. Order and complexity: Order can be achieved by applying a structure as well as organizing the components whether in the built environment or the natural environment. Curiosity and temptation: Curiosity expresses the human need for exploration, discovery, mystery, and creativity, which are all useful in problem-solving. Change and metamorphosis (transformation): Changing is a permanent thing in natural and human systems which has been reflected in the growth, maturity, and metamorphosis

		processes. Security and safety: One of the main goals of the built environment is to ensure safety against the threatening forces existing in nature. Domination and control: Parks and enclosures are the results of the human desire to dominate and control nature. Attachment and dependence: Attachment leads to dependence. Attractiveness and beauty: Beauty has always been highly attractive for human beings. Exploration: Nature is an environment that has always been the richest source of information and the most motivating factor for the human mind. Information and Perception: Mental satisfaction and the ability to understand are increased by the designs that emphasize the complexity of forms in nature. Fear and being horrific (horror): Negative and unwanted emotions are part of the biophilic characteristics. This element may be somewhat unexpected and unusual, but this element has been in a complementary relationship with one of the goals of the built environment, which is

		the protection of humans against the threatening factors of nature. Respect and spirituality: This element seeks to define the semantic relationship between humans and creation.

As mentioned, one of the most important reasons and potentials for attracting tourists to Khorramabad is the beaches and good weather in this city. Due to the importance of the weather and the number of travelers entering this region, the number of people visiting the city is very high compared to the accommodation and recreation facilities of the city which should be provided to them. One of the most important reasons for this is the problems of the accommodation centers in terms of quantity and quality. The travelers to this city, due to the low number of accommodation centers have to accommodate in guesthouses and inns with very low and unsanitary facilities and mainly rooms rented by the natives for very high costs.

When a tourist is attracted to a region by the mentioned potentials, he/she must be well guided so that he/she will be satisfied with the accommodation type, time, and the memory of the stay. This issue is also very important in terms of economic return.

Despite the medical advances that have been made in the treatment of some diseases, mineral water therapy has not only retained its properties but also these properties should be given more attention, because treatment with common medicines, although is desirable to improve some defects, usually has dangerous reactions on the body organs that they need treatment. But treatment with mineral water, if done correctly, does not cause such discomfort, but in some diseases is very effective and desirable and generally balances the organs of the body without any adverse reactions. Mineral waters, in addition to their treatment effect for internal and cutaneous diseases, also have effective and extensive treatment effects physically and in terms of appearance. The properties of mineral waters and sometimes their radioactivity properties and technical and therapeutic properties also cause peace of mind because treatment through using them has a general effect on the body organs. Resting in mineral water centers causes sensitive changes in human life and causes mental occupations caused by working and daily constraints to be forgotten for a while.

The designs made according to the collected dimensions and elements:

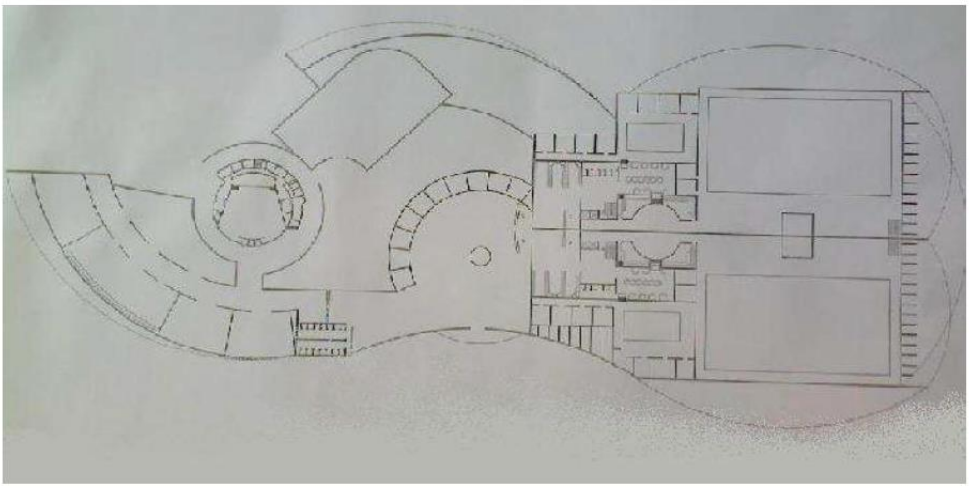

Figure 4: Ground floor plan

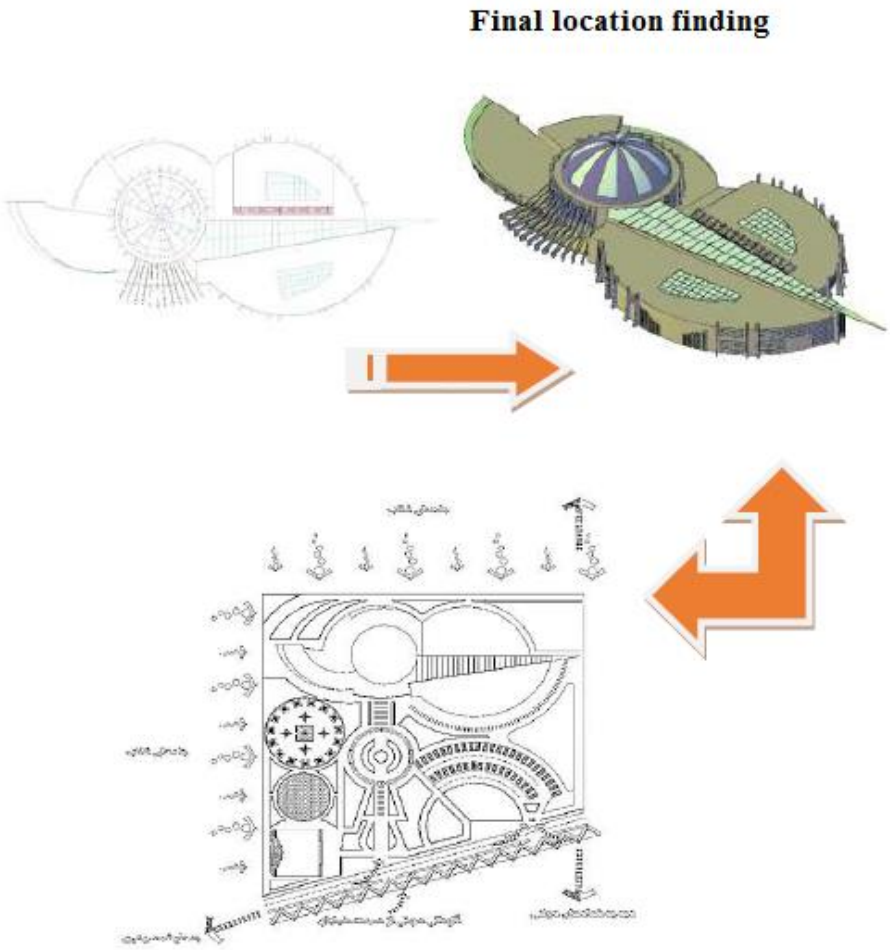

Figure 5: Concept location finding

Given the beautiful view from the location of the site, the volume, after proper location finding, should be designed such that it can provide the highest possible percentage of vision and landscape to people, and in general, the volume, from inside and outside, must be designed in a way that the user feels relaxed at all times; it means creating a close contact between the person and the surrounding nature. On the other hand, due to the existence of hydrotherapy space and sports pools simultaneously for men and women, space should be located in such a way that in addition to using enough light and heat, it will have the possibility of seeing other spaces.

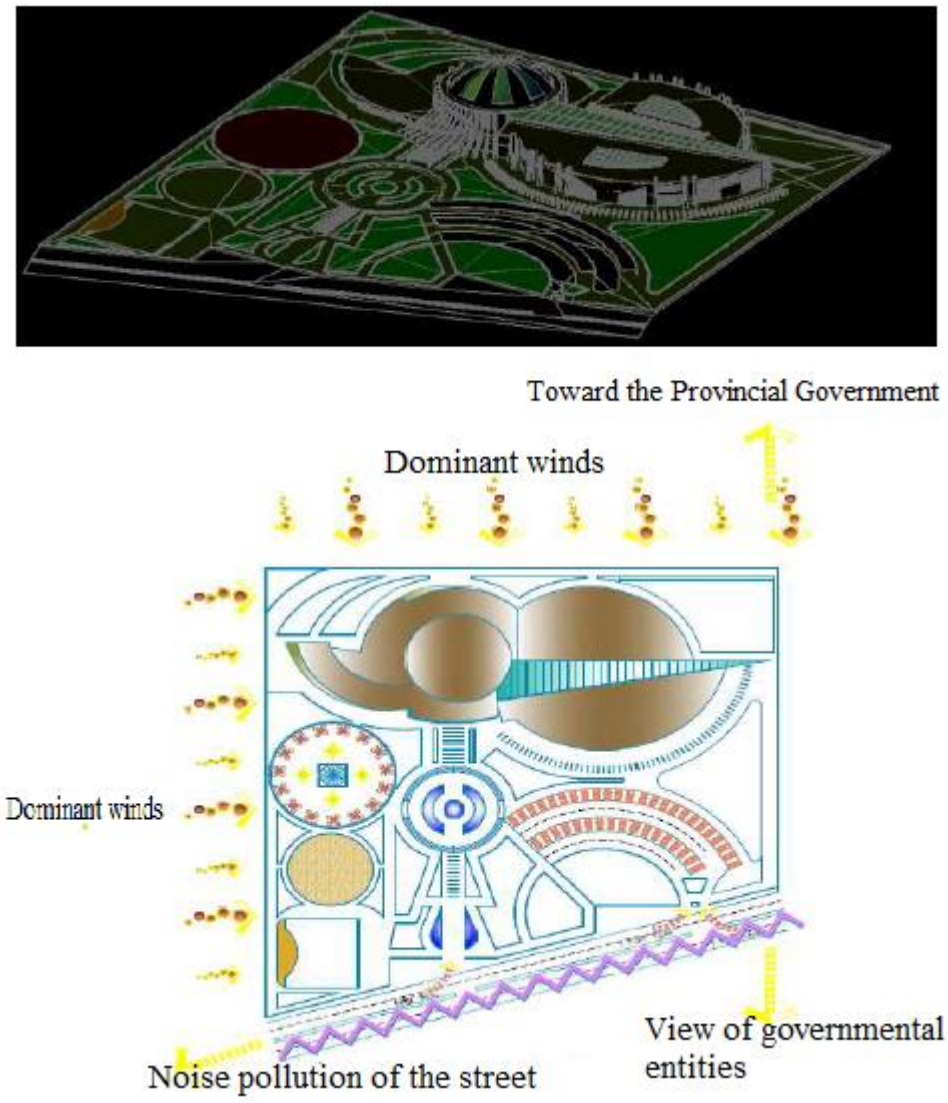

Figure 6: Site analysis

CONCLUSION

Tourism, as a business branch, has a great role and significance in the economic growth and development of countries, especially in developing

countries. Given that the developing countries pay attention to industry and industrialization for economic growth and development and consider their advancement as synonymous with industrialization, therefore, tourism has been recognized and declared by the United Nations as an industry so that in the third world or developing and backward countries it can enjoy the benefits considered for industries. The scientific-industrial advances of the last few decades, and consequently the increase in relative income and the possibility of fast movement of travelers, especially in the developed countries, caused tourism to receive more attention.

The city of Khorramabad having a good climate and mineral springs, which are unique due to their diverse and different healing properties, and being located in the beautiful foothills of the mountains and being located in the southwest of the country has a good position to attract tourists. Quantitative and qualitative lack of touristic services and facilities in this area has caused more attention to it.

The results showed that due to the mentioned potentials, Khorramabad can be among the many touristic cities of our country so that people can count on it as a long and useful trip.

On the other hand, this is strengthened when the city is upgraded, because it currently has many shortages in urban spaces and uses. So, by including a series of recreational and cultural spaces in this complex, in addition to accepting non-residents, the complex will also respond to a part of shortcomings in the region. The combination of the two issues of tourism and hydrotherapy in this region became the most important factor in the formation of this study. On the other hand, creating a suitable accommodation for travelers will meet the needs of the region quantitatively and qualitatively, and by combining it with the hydrotherapy sector, the main potential of the region will be revived, and its true value will be shown by proper use of mineral water springs and performing appropriate scientific-recreational programs, and this touristic pole of the country will have useful and appropriate facilities fitting with the travelers' demands. The proposed complex in the form of hydrotherapy, using the potential of the existing springs, along with creating a sports space and strengthening the tourism potential of the region will provide a controlling and protection of mineral water springs.

REFERENCES

Bastani Fard, Matin, (2006), The link between sports and architecture, the first national conference on the city and sports, Tehran.

Davoodi Roknabadi, Fatemeh and Rahmani Qasbeh, Mohammad, 1398, Principles of designing a tourism park with a park of celebrities with the approach of strengthening the bond between society and the educated class, Fourth International Conference on Research in Science and Engineering

Lahijanian, Akram al-Muluk, Shia Beigi, Shadi (2010), An analytical approach to the design and management of urban parks and its relationship with the health of citizens.

Shiri, Amirhossein and Ahmadi, Ferial, 1399, Investigating the Impact of Environmental Design in Landscape on Social Sustainability (Case Study: Sari City National Park), Second Conference on Environment, Civil Engineering, Architecture and Urban Planning

Azizi, Mohsen, 1399, The Impact of Reconstruction Components on the Design of the Museum of Industry Park (Case Study of Shiraz Cement Factory), 7th National Conference on New Studies and Research in the Field of Geography, Architecture and Urban Planning, Iran, Tehran

Masoudi, Sara, 1399, Components of Passive Defense in Urban Parks Design (Case Study of Shiraz Garden of Paradise), 7th National Conference on Modern Studies and Research in the Field of Geography, Architecture and Urban Planning of Iran, Tehran

Moslehi, Maryam, Rafati, Mahsa, (2014), A Study of Green Space Commands on Human Communities: Physical Activity, Physical and Mental Health and. Accident Reduction, Human and Environment Quarterly, No. 3

Maroof, Monira, Zarei, Hossein (2014), Repairing components on the health and psychological quality of Iranian urban parks based on the analysis of experts' opinions. Cityscape Research, First Year, No. 1, Spring and Summer.

Coline C. Dony. (2013). Reflection of urban landscape in the mental health of citizens in cities.

Angel Mario. (2014). Seeking-Escaping Analysis of the role of urban parks in improving the quality of urban life by using the model.